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expelled, except for the presence of a few sporozoites in the one which had, no doubt, been ruptured during the dissection of the mosquito.

The 38 specimens of *Anopheles punctipennis* used in parallel feedings from the same case serve as a control series, 11 of these becoming infected from the sixth to the sixteenth day after biting; in six of these the salivary glands were extensively invaded with sporozoites.

Two specimens of *Anopheles quadrimaculatus* used under the same conditions as the foregoing remained negative throughout the course of the experiment.

During the experiment the specimens of *Anopheles crucians* and controls were allowed the usual diet of raisins and water and kept in lantern globes in an incubator registering 25.5° to 26° C. The mosquitoes were not disturbed during the five days following the single infective feeding, except that the dead and feeble individuals were removed for dissection.

The following table summarizes the experimental data:

Species of Anopheles.	Number applied.	Number times applied to case of tertian.	Remarks.
<i>A. punctipennis</i>	38	1	11 infected 6-16 days; 6 gland and stomach; 5 stomach.
<i>crucians</i>	19	1	2 infected, 11-13 days, both glands and stomach; 3 immature zygotes on stomach wall.
<i>quadrimaculatus</i>	2	1	No infection.

PLAGUE-PREVENTION WORK.

CALIFORNIA.

The following reports of plague-prevention work in California were received from Surg. Boggess, of the United States Public Health Service, in charge of the work:

WEEK ENDED FEB. 26, 1916.

SAN FRANCISCO, CAL.

RAT PROOFING.

New buildings:	
Inspections of work under construction.	150
Basements concreted (square feet, 35,350).....	52
Floors concreted (square feet, 5,870).....	5
Yards, passageways, etc. (square feet, 11,539).....	57
Total area of concrete laid (square feet).	52,759
Class A, B, and C (fireproof) buildings:	
Inspections made.....	120
Roof and basement ventilators, etc., screened.....	639
Wire screening used (square feet).....	3,278
Openings around pipes, etc., closed with cement.....	582
Sidewalk lens lights replaced.....	1,008

SAN FRANCISCO, CAL.—Continued.

RAT PROOFING—continued.

Old buildings:	
Inspections made.....	370
Wooden floors removed.....	35
Yards and passageways, planking removed.....	16
Cubic feet new foundation walls installed.....	6,505
Concrete floors installed (square feet, 13,163).....	26
Basements concreted (square feet, 16,965).....	21
Yards and passageways, etc., concreted (square feet, 7,307).....	41
Total area concrete laid (square feet).....	37,435
Floors rat proofed with wire cloth (square feet, 6,342).....	5
Buildings razed.....	16

SAN FRANCISCO, CAL.—Continued.

RAT PROOFING—continued.

New garbage cans stamped approved.....	428
Nuisances abated.....	281

OPERATIONS ON THE WATER FRONT.

Vessels inspected for rat guards.....	18
Reinspections made on vessels.....	17
New rat guards procured.....	5
Defective rat guards repaired.....	13
Rats trapped on wharves and water front..	25
Rats trapped on vessels.....	16
Traps set on wharves and water front.....	177
Traps set on vessels.....	47
Vessels trapped on.....	12
Poisons placed on water front (pieces).....	3,600
Poisons placed within Panama-Pacific International Exposition grounds.....	38,500
Bait used on water front and vessels (bacon, pounds).....	6
Bread used in poisoning water front (loaves).....	9
Poison used on water front (pounds).....	3

RATS COLLECTED AND EXAMINED FOR PLAGUE.

San Francisco:

Collected.....	318
Examined.....	258
Found infected.....	None.

Hollister:

Collected.....	2
Examined.....	2
Found infected.....	None.

RATS IDENTIFIED.

Mus norvegicus.....	201
Mus rattus.....	44
Mus alexandrinus.....	37
Mus musculus.....	36

RANCHES INSPECTED AND HUNTED OVER.

Monterey County.....	24
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SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE.

Monterey County:

Collected.....	179
Examined.....	179
Found infected.....	None.

WEEK ENDED MAR. 4, 1916.

SAN FRANCISCO, CAL.

RAT PROOFING.

New buildings:	
Inspections of work under construction.....	220
Basements concreted (square feet, 52,505).....	48
Floors concreted (square feet, 20,353).....	13
Yards, passageways, etc. (square feet, 24,849).....	118
Total area of concrete laid (square feet).....	97,707
Class A, B & C (fireproof) buildings:	
Inspections made.....	144
Roof and basement ventilators, etc., screened.....	865
Wire screening used (square feet).....	4,510
Openings around pipes, etc., closed with cement.....	1,106
Sidewalk lens lights replaced.....	500
Old buildings:	
Inspections made.....	338
Wooden floors removed.....	45
Yards and passageways, planking removed.....	16

SAN FRANCISCO, CAL.—Continued.

RAT PROOFING—continued.

Old buildings—Continued.

Cubic feet new foundation walls installed.....	6,990
Concrete floors installed (square feet, 19,330).....	25
Basements concreted (square feet, 18,106).....	22
Yards and passageways, etc., concreted (square feet, 21,036).....	73
Total area concrete laid (square feet).....	58,472
Floors rat proofed with wire cloth (square feet, 5,715).....	6
Buildings razed.....	31
New garbage cans stamped "Approved".....	779
Nuisances abated.....	331

OPERATIONS ON THE WATER FRONT.

Vessels inspected for rat guards.....	18
Reinspections made on vessels.....	18
New rat guards procured.....	21
Defective rat guards repaired.....	14
Vessels on which cargo was inspected.....	1

Amount of cargo inspected and description of same.	Condition.	Rat evidence.
Steamer President from Seattle:		
115 cases apples, milk, salmon, and household goods.....	O. K.....	None.
200 sacks flour, wheat, and bran.....	O. K.....	None.
100 tubs cheese.....	O. K.....	None.

Rats trapped on wharves and water front..	30	Bait used on water front and vessels, bacon (pounds).....	6
Rats trapped on vessels.....	20	Poisons placed within Panama-Pacific International Exposition grounds (pieces).....	35,600
Traps set on wharves and water front.....	182	Bread used in poisoning water front (loaves).....	9
Traps set on vessels.....	48	Poison used on water front (pounds).....	1
Vessels trapped on.....	13		
Poisons placed on water front (pieces).....	3,600		

RATS COLLECTED AND EXAMINED FOR PLAGUE.

Collected.....	403
Examined.....	331
Found infected.....	None.

RATS IDENTIFIED.

Mus norvegicus.....	200	Mus alexandrinus.....	84
Mus rattus.....	78	Mus musculus.....	41

SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE.

County.	Col- lected.	Exam- ined.	Found infected.
Monterey.....	239	239	5
Contra Costa.....	40	40	0

RANCHES INSPECTED AND HUNTED OVER.

Monterey County.....	32
Contra Costa.....	13

PLAGUE-INFECTED SQUIRRELS.

Monterey County—

Shot February 22, 1916, M. Johnson ranch, 8 miles north of Salinas, 2 squirrels.

Shot February 23, 1916, M. Johnson ranch, 8 miles north of Salinas, 3 squirrels.

RECORD OF PLAGUE INFECTION.

Places in California.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squir- rel plague.	Total number ro- dents found in- fected since May, 1907.
Cities:				
San Francisco.....	Jan. 30, 1908	Oct. 23, 1908	(1)	398 rats.
Oakland.....	Aug. 9, 1911	Dec. 1, 1908	(1)	126 rats.
Berkeley.....	Aug. 28, 1907	(1)	(1)	(1)
Los Angeles.....	Aug. 11, 1908	(1)	Aug. 21, 1908	1 squirrel.
Counties:				
Alameda (exclusive of Oakland and Berkeley).....	Sept. 24, 1909	Oct. 17, 1909 ²	July 12, 1915	287 squirrels; 1 wood rat.
Contra Costa.....	July 13, 1915	(1)	Nov. 12, 1915	1,597 squirrels.
Fresno.....	(1)	(1)	Oct. 27, 1911	1 squirrel.
Merced.....	(1)	(1)	July 12, 1911	5 squirrels.
Monterey.....	(1)	(1)	Feb. 23, 1916	11 squirrels.
San Benito.....	June 4, 1913	(1)	Aug. 14, 1915	50 squirrels.
San Joaquin.....	Sept. 18, 1911	(1)	Aug. 26, 1911	18 squirrels.
San Luis Obispo.....	(1)	(1)	Jan. 29, 1910	1 squirrel.
Santa Clara.....	Aug. 31, 1910	(1)	July 23, 1913	25 squirrels.
Santa Cruz.....	(1)	(1)	May 17, 1910	3 squirrels.
Stanislaus.....	(1)	(1)	June 2, 1911	13 squirrels.

¹ None.² Wood rat.

The work is being carried on in the following-named counties: Alameda, Contra Costa, San Francisco, Stanislaus, San Benito, Monterey, Lassen, and Modoc.

LOUISIANA—NEW ORLEANS—PLAGUE ERADICATION.

The following reports of plague-eradication work at New Orleans were received from Surg. Creel, of the United States Public Health Service, in charge of the work:

WEEK ENDED MAR. 4, 1916.

OUTGOING QUARANTINE.		OUTGOING QUARANTINE—continued.	
Vessels fumigated with sulphur.....	11	Sulphuric acid used in cyanide-gas fumiga- tion (pints).....	561
Vessels fumigated with cyanide gas.....	13	Clean bills of health issued.....	23
Sulphur used (pounds).....	627	Foul bills of health issued.....	2
Cyanide used in cyanide-gas fumigation (pounds).....	381		

FIELD OPERATIONS.

Rodents trapped.....	8,635
Number of premises inspected.....	7,554
Notices served.....	873
Number of garbage cans installed.....	21

BUILDINGS RAT PROOFED.

By elevation.....	239
By marginal concrete wall.....	203
By concrete floor and wall.....	234
By minor repairs.....	457
Total buildings rat proofed.....	1,133
Square yards of concrete laid.....	4,766
Premises, planking, and shed flooring removed.....	225
Buildings demolished.....	184
Total buildings rat proofed to date (abated).....	105,613

LABORATORY OPERATIONS.

Rodents received by species:	
<i>Mus rattus</i>	142
<i>Mus norvegicus</i>	983

LABORATORY OPERATIONS—continued.

Rodents received by species—Continued.

<i>Mus alexandrinus</i>	185
<i>Mus musculus</i>	7,201
Wood rats.....	140
Musk rats.....	6
Putrid (included in enumeration of species).....	47
Total rodents received at laboratory.....	8,657
Rodents examined.....	2,094
Number of rats suspected of plague.....	168
Plague rats confirmed.....	1

PLAGUE RAT.

Case No. 280:

Address, 233 St. Maurice Avenue.

Captured, Feb. 10, 1916.

Diagnosis confirmed, Feb. 28, 1916.

Treatment of premises: Intensive trapping
immediate rat proofing.

WEEK ENDED MAR. 11, 1916.

OUTGOING QUARANTINE.

Vessels fumigated with sulphur.....	3
Vessels fumigated with cyanide gas.....	20
Sulphur used (pounds).....	300
Cyanide used in cyanide-gas fumigation (pounds).....	631
Sulphuric acid used in cyanide-gas fumigation (pints).....	950
Clean bills of health issued.....	36
Foul bills of health issued.....	7

FIELD OPERATIONS.

Rodents trapped.....	7,137
Premises inspected.....	5,677
Notices served.....	761
Garbage cans installed.....	2

BUILDINGS RAT PROOFED.

By elevation.....	111
By marginal concrete wall.....	109
By concrete floor and wall.....	78
By minor repairs.....	251
Total buildings rat proofed.....	549
Square yards of concrete laid.....	4,399
Number of premises, planking and shed flooring removed.....	114
Number of buildings demolished.....	80
Total buildings rat proofed to date (abated).....	106,162

LABORATORY OPERATIONS.

Rodents received by species:

<i>Mus rattus</i>	77
<i>Mus norvegicus</i>	882
<i>Mus alexandrinus</i>	121
<i>Mus musculus</i>	6,012
Wood rats.....	130
Musk rats.....	4
Putrid (included in enumeration of species).....	34
Total rodents received at laboratory.....	7,226
Rodents examined.....	1,709
Number of rats suspected of plague.....	132
Plague rats confirmed.....	None.

PLAGUE STATUS TO MAR. 11, 1916.

Last case of human plague, Sept. 8, 1915.

Last case of rodent plague, Feb. 28, 1916.

Total number of rodents captured to Mar.

11..... 640,217

Total number of rodents examined to Mar.

11..... 334,711

Total cases of rodent plague to Mar. 11, by

species:

<i>Mus musculus</i>	6
<i>Mus rattus</i>	18
<i>Mus alexandrinus</i>	11
<i>Mus norvegicus</i>	245

Total rodent cases to Mar. 11, 1916..... 280

¹ Indicates number of rodents the tissues of which were inoculated into guinea pigs. Most of them showed on necropsy only evidence of recent inflammatory process; practically none presented gross lesions characteristic of plague infection.

WASHINGTON—SEATTLE—PLAGUE ERADICATION.

The following reports of plague-eradication work at Seattle were received from Surg. Lloyd, of the United States Public Health Service, in charge of the work:

WEEK ENDED FEB. 26, 1916.

RAT PROOFING.	
New buildings inspected.....	12
New buildings reinspected.....	52
Basements concreted, new buildings (square feet, 9,260).....	14
Floors concreted, new buildings (square feet, 12,275).....	9
Yards, etc., concreted, new buildings (square feet, 1,250).....	3
Total concrete laid, new structures (square feet).....	22,785
New buildings elevated.....	2
New premises rat proofed, concrete.....	23
Old buildings inspected.....	6
Premises rat proofed concrete, old buildings. Floors concreted, old buildings, (square feet, 1,270).....	1
Wooden floors removed, old buildings.....	1
Buildings razed.....	1

LABORATORY AND RODENT OPERATIONS.

Dead rodents received.....	10
Rodents trapped and killed.....	353
Rodents recovered after fumigation.....	18
Total.....	381
Rodents examined for plague infection.....	230
Poison distributed, pounds.....	18
Bodies examined for plague infection.....	7

CLASSIFICATION OF RODENTS.

Mus rattus.....	13
Mus alexandrinus.....	53
Mus norvegicus.....	157
Mus musculus.....	110
Unclassified.....	18

WATER FRONT.	
Vessels inspected and histories recorded....	8
Vessels fumigated.....	3
Sulphur used, pounds.....	4,265
New rat guards installed.....	23
Defective rat guards repaired.....	18
Fumigation certificates issued.....	3
Port sanitary statements issued.....	41
The usual day and night patrol was maintained to enforce rat guarding and fending.	

MISCELLANEOUS WORK.

Rat-proofing notices sent to contractors, new buildings.....	11
Letters sent in re rat complaints.....	4
Lectures on sanitary measures.....	2
Restaurant permits vized.....	7

RODENTS EXAMINED IN EVERETT.

Mus norvegicus trapped.....	43
Mus norvegicus found dead.....	1
Mus rattus trapped.....	1
Mus musculus trapped.....	1
Total.....	46
Rodents examined for plague infection.....	43
Rodents proven plague infected.....	None.

RAT-PROOFING OPERATIONS IN EVERETT.

New buildings inspected.....	4
New buildings, concrete foundations.....	4
New buildings, yards concrete (square feet, 1,686).....	2
Total concrete laid, new buildings (square feet).....	1,686

WEEK ENDED MAR. 4, 1916.

RAT PROOFING.	
New buildings inspected.....	24
New buildings reinspected.....	35
Basements concreted (new buildings) (square feet, 14,750).....	12
Floors concreted (new buildings) (square feet, 25,275).....	14
Yards, etc., concreted (new buildings) (square feet, 2,540).....	4
Total concrete laid, new structures (square feet).....	42,565
New buildings elevated.....	3
New premises rat proofed, concrete.....	26
Old buildings inspected.....	9
Premises rat proofed, concrete (old buildings).....	4
Floors concreted (old buildings) (square feet, 3,775).....	4
Wooden floors removed (old buildings).....	4
Buildings razed.....	3

LABORATORY AND RODENT OPERATIONS.

Dead rodents received.....	15
Rodents trapped and killed.....	346
Rodents recovered after fumigation.....	14
Total.....	375
Rodents examined for plague infection.....	219

RAT PROOFING—continued.	
Rodents proven plague infected.....	None.
Poison distributed (pounds).....	10
Bodies examined for plague infection.....	6
Bodies found plague infected.....	None.

CLASSIFICATION OF RODENTS.

Mus rattus.....	2
Mus alexandrinus.....	74
Mus norvegicus.....	182
Mus musculus.....	117

WATER FRONT.

Vessels inspected and histories recorded....	11
Vessels fumigated.....	2
Sulphur used (pounds).....	3,100
New rat guards installed.....	9
Defective rat guards repaired.....	22
Fumigation certificates issued.....	2
Port sanitary statements issued.....	48

The usual day and night patrol was maintained to enforce rat guarding and fending.

MISCELLANEOUS WORK.

Rat-proofing notices sent to contractors (new buildings).....	36
Lectures on sanitary measures.....	1

RODENTS EXAMINED IN TACOMA.	
Mus norvegicus trapped.....	79
Mus norvegicus found dead.....	8
Mus rattus trapped.....	2
Mus alexandrinus trapped.....	1
Total.....	90
Rodents examine d for plague infection.....	83
Rodents proven plague infected.....	None.
RODENTS EXAMINED IN EVERETT.	
Mus norvegicus trapped.....	35
Mus rattus trapped.....	3
Mus alexandrinus trapped.....	1
Mus musculus trapped.....	1
Total.....	40

RODENTS EXAMINED IN EVERETT—continued.	
Rodents examined for plague infection.....	38
Rodents proven plague infected.....	None.

RAT-PROOFING OPERATIONS IN EVERETT.	
New buildings inspected.....	4
New buildings, concrete foundations.....	3
New buildings elevated 18 inches.....	1
New buildings, basements concreted (square feet, 1,210).....	1
New buildings, yards concreted (square feet, 60).....	1
Total concrete laid (new buildings) (square feet).....	1,270

HAWAII—PLAGUE PREVENTION.

The following reports of plague-prevention work in Hawaii were received from Surg. Trotter, of the United States Public Health Service:

Honolulu.

WEEK ENDED FEB. 26, 1916.

Total rats and mongoose taken.....	362	Average number of traps set daily.....	984
Rats trapped.....	356	Cost per rat destroyed, 21½ cents.	
Mongoose trapped.....	6	Last case rat plague, Aiea, 9 miles from Honolulu, Apr. 12, 1910.	
Examined microscopically.....	302	Last case human plague, Honolulu, July 12, 1910.	
Showing plague infection.....	None.	Last case rat plague, Paauhau, Hawaii, Jan. 18, 1916.	
Classification of rats trapped:		Last case human plague, Paauhau Plantation, Hawaii, Dec. 16, 1915.	
Mus alexandrinus.....	176		
Mus musculus.....	92		
Mus norvegicus.....	59		
Mus rattus.....	29		

Hilo.

WEEK ENDED FEB. 19, 1916.

Rats and mongoose taken.....	3,065	Rats and mongoose plague infected.....	None.
Rats trapped.....	3,007	Classification of rats trapped and found dead:	
Rats found dead.....	10	Mus norvegicus.....	499
Mongoose taken.....	48	Mus alexandrinus.....	411
Rats and mongoose examined macroscopically.....	3,065	Mus rattus.....	958
Rats and mongoose examined microscopically.....	2	Mus musculus.....	1,149
Rats and mongoose examined bacteriologically.....	1	Last case of rat plague, Paauhau Sugar Co., Paauhau, Jan. 18, 1916	
		Last case of human plague, Paauhau Sugar Co., Paauhau, Dec. 16, 1915.	